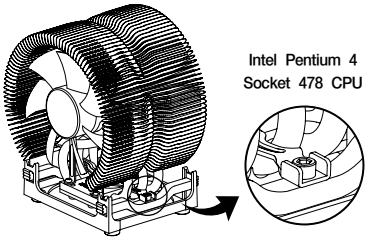
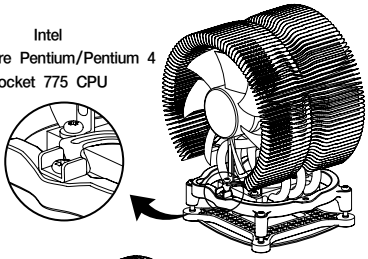
User's Manual

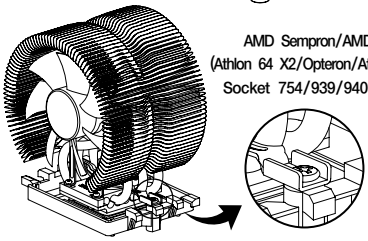
(English version)

ZALMAN

CNPS9500







* Applies to all versions of CNPS9500.

* Please read before installation.

http://www.zalman.co.kr http://www.zalmanusa.com

1. Features

1) 100% copper heatsink with aerodynamically optimized “tunnel” design for maximum cooling efficiency.
2) Innovative and patented, curved heatpipe design for a heat transfer capacity of up to 6 heatpipes with just 3.
3) Optimized heatsink layout for maximum cooling efficiency with minimal materials.
4) 0.2mm ultra-slim fins for minimized weight and reduced airflow resistance.
5) Ultra quiet CNPS 92mm opaque fan with blue LEDs.
6) Aerodynamically optimized heatsink for smoother airflow and minimal noise.
7) Compatible CPUs (Refer to “7. Compatible CPUs” on page 3. for more information.)
   - Intel : All Dual Core Pentium CPUs (Socket 775)
     All Pentium 4 CPUs (Socket 775/478)
   - AMD : All Dual Core AMD Athlon 64 X2 CPUs (Socket 939)
     All AMD Sempron/AMD64 CPUs (Socket 754/939/940)
8) Adjustable fan speed controller (FAN MATE 2) enables control of noise and fan speed.

2. Specifications

1) Flower Heatsink (FHS)

Spec. \ Model		CNPS9500
Materials		Pure Copper
Weight(g)		530(1)
Thermal Resistance (°C/W)	Silent Mode	0.16
	Normal Mode	0.12
Dimensions (mm)		85(L) X 112(W) X 125(H)
Dissipation Area (㎠)		3,698

2) Fan

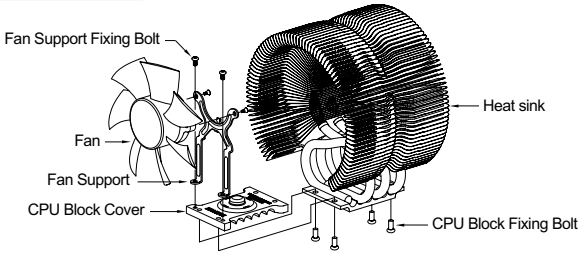
- Bearing Type : 2-Ball
- Rotation Speed : 1,350RPM ± 10 % (Silent Mode)
  2,600RPM ± 10 % (Low-noise Mode)
- Noise (dB) : 18.0dB ± 10% (Silent Mode) - measured at 1m from noise source
  27.5dB ± 10% (Low-noise mode) - measured at 1m from noise source

3) FAN MATE 2

- Output Voltage : 5V ~ 11V ± 2 %
- Allowable Power : 6W or lower

(Note 1) The maximum weight for a cooler is specified as 450g for Intel Socket 775 and AMD Socket 754/939/940. Special care should be taken when moving a computer equipped with a cooler that exceeds the specified weight limit. Zalman is not responsible for any damage that occurs when moving a computer.

3. Exploded View



4. Patents

- ❖ Korean Patent Application No. 05-45737
- ❖ Korean Design Applications No. 05-15303, 15304, 15306, 15307, 17970, 17971
- ❖ Patent Applications pending in over 20 nations around the world including USA, EU, and Japan

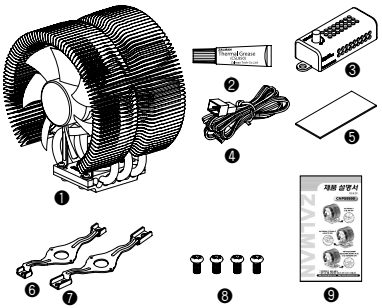
5. Precautions

1) If excessive force is exerted on the fan, it may result in malfunction or damage to the product and/or the computer.
2) Do not put your finger in the fan while spinning.
3) Keep the product away from the reach of children and pets.
4) Check the components list and condition of the product before installation. If any problem is found, contact your place of purchase to obtain a replacement/refund.
5) Zalman Tech is not responsible for any damages arising from using the product outside of its intended purpose.
6) CPU and/or motherboard may become damaged if the product is incorrectly installed. Familiarize yourself with the “Installation” steps before installing the product.

6. Components

1) Common Components

- ❶ CNPS9500
- ❷ Thermal Grease
- ❸ Fan Speed Controller (FAN MATE 2)
- ❹ Cable for FAN MATE 2
- ❺ Double-sided Tape (to attach FAN MATE 2)
- ❻ One(1) S-Type Clip
- ❼ One(1) L-Type Clip
- ❽ Four(4) Bolts (for installing the Cooler)
- ❾ User’s Manual

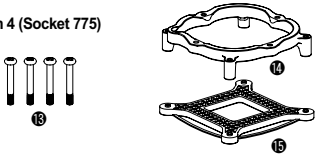


2) Components for Intel Pentium 4 (Socket 478)

- ❿ Two(2) Clip Supports for Socket 478
- ⓫ Two(2) Installation Bolts for Socket 478
- ⓬ One(1) L-Wrench

3) Components for Intel Dual Core Pentium / Pentium 4 (Socket 775)

- ⓭ Four(4) Clip Support Fixing Bolts for Socket 775
- ⓮ One(1) Clip Support for Socket 775
- ⓯ One(1) Backplate for Socket 775

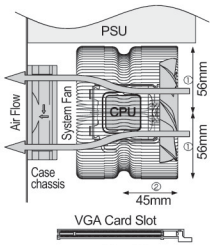


4) Components for AMD Sempron/AMD64 (Socket 754/939/940)

- ⓰ Two(2) Nipples

7. Compatible CPUs

1) All Intel Dual Core Pentium CPUs (Socket 775)
   - Pentium Extreme Edition, Pentium D
2) All Intel Pentium 4 (Socket 775/478)
   - Pentium 4 Extreme Edition, Pentium 4
3) All AMD Dual Core Athlon 64 X2 CPUs (Socket 939)
   - Athlon 64 X2
4) All AMD Sempron/AMD64 (Socket 754/939/940)
   - Opteron/Athlon 64

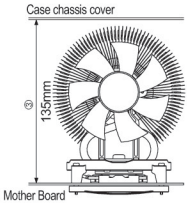


[Fig. 1]

8. Installation Requirements

Install only on systems meeting the following conditions:

① No interfering components (e.g. PSU, video card) within 56mm from the center of the CPU. (Refer to Fig. 1)
② No interfering components (e.g. ODD) within 45mm from the center of the CPU. (Refer to Fig. 1)
③ Case chassis cover must be at least 135mm away from the motherboard. (Refer to Fig. 2)
④ Cases with Air Guide must have the Air Guide Duct removed before installation.



[Fig. 2]

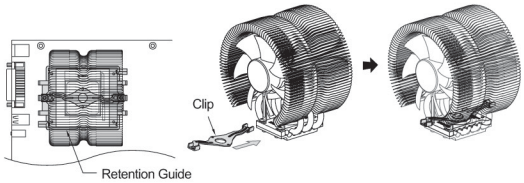
9. Installation

※ **How to Install the CNPS9500's Clip**

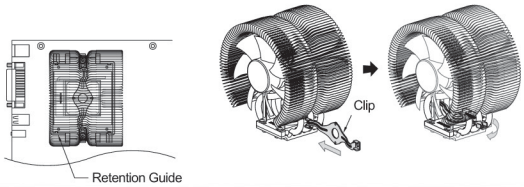
CNPS9500 must be installed in the orientation that matches the rear system fan's airflow (Refer to Fig. 1).

Clip installation method depends on the motherboard's socket orientation. Follow the correct method for your motherboard. Be careful not to exert excessive force on the fan during the installation of the clip, as it may cause malfunctions.

A. For motherboards with horizontally - oriented retention guide



B. For motherboards with vertically - oriented retention guide



1) Intel Dual Core Pentium / Pentium 4 - Socket 775

① Install Clip

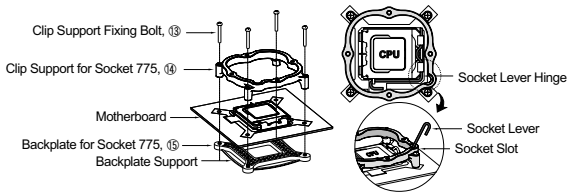
Refer to "How to Install the CNPS9500's Clip" on page 3 to correctly install the clip (S-Type, ⑫) on CNPS9500.

② Install Clip Support

Align the clip support for Socket 775 (⑭) and the backplate for Socket 775 (⑮) with the mounting holes on the motherboard and fasten them together using the clip support fixing bolts (⑬).

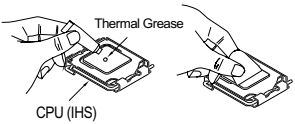
The lever slot on the clip support (⑭) should be properly oriented on the hinged side of the socket lever when installing.

※ The backplate support on the backplate for Socket 775 (⑮) can be removed if deemed unnecessary.



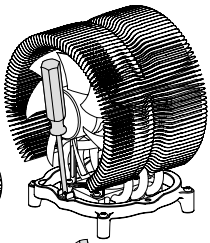
③ Apply Thermal Grease

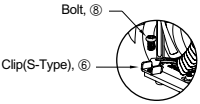
Clean off particles and residue from the top of the CPU. Then spread the included thermal grease (②) thinly on top of the CPU.



④ Place Cooler

Insert two bolts (⑧) into holes on the clip (S-Type,⑥) and place CNPS9500 at the center of the CPU. Fasten the bolts slightly at first. Then, fasten the bolts in an alternating manner until the clip (⑥) is completely pressed against the clip supports.

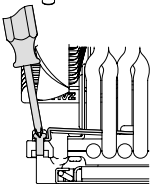




※ **Caution**

When installing CNPS9500 on a motherboard with horizontally-oriented retention guide, take extra care not to let the screwdriver exert excessive force on the fan.

If excessive force is exerted on the fan, it may cause a malfunction.



⑤ Connect Power (Use FAN MATE 2)

◆ Please refer to FAN MATE 2 installation and usage on page 7.

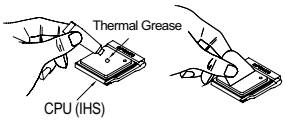
2) Intel Pentium 4 - Socket 478

① Install Clip

Refer to “How to Install the CNPS9500’s Clip” on page 3 to correctly install the clip (S - Type, ⑥) on CNPS9500.

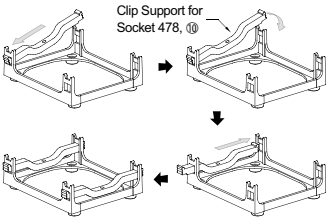
② Apply Thermal Grease

Clean off particles and residue from the top of the CPU. Then spread the included thermal grease (②) thinly on top of the CPU.



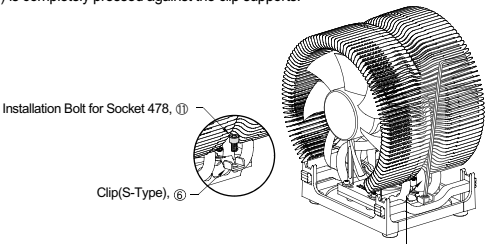
③ Install Clip Support for Socket 478

Install the two clip supports for Socket 478 (⑩) on both sides of the retention guide as shown in the diagram.

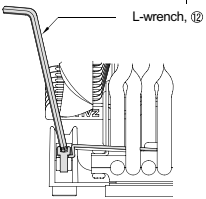


④ Place Cooler

Insert two installation bolts for Socket 478 (⑪) into holes on the clip (S-Type, ⑥) and place CNPS9500 at the center of the CPU. Using the L-wrench (⑫), fasten the bolts for Socket 478(⑪) into each hole on the clip support for Socket 478(⑩) slightly at first. Then, fasten the bolts (⑪) in an alternating manner until the clip (⑥) is completely pressed against the clip supports.



※ When installing CNPS9500 on a motherboard with horizontally-oriented retention guide, take extra care not to let the L-wrench (⑫) exert excessive force on the fan. **If excessive force is exerted on the fan, it may cause a malfunction.**



⑤ Connect Power (Use FAN MATE 2)

◆ Please refer to FAN MATE 2 installation and usage on page 7.

3) AMD Sempron/AMD64 - Socket 754/939/940

※ When CNPS9500 is installed on an AMD system, the existing cooler installation framework (retention frame, backplate, screws) is used for the installation.

① Install Clip

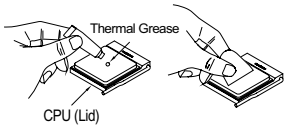
Refer to "How to Install the CNPS9500's Clip" on page 3 to correctly install the clip (L-Type, ⑦) on CNPS9500.

② Separate Retention Frame Fixing Screws

Unscrew the screws that fix the existing retention frame onto its place.

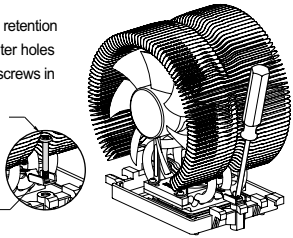
③ Apply Thermal Grease

Clean off particles and residue from the top of the CPU. Then spread the included thermal grease (⑦) thinly on top of the CPU.



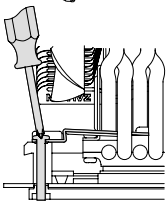
④ Place Cooler

Place CNPS9500 at the center of the CPU. Fasten the retention frame fixing screws onto the backplate through the outer holes of the clip (L-type, ⑦) slightly at first. Then, fasten the screws in an alternating manner until the clip (⑦) is completely pressed against the retention frame.



※ When installing CNPS9500 on a motherboard with horizontally-oriented retention guide, take extra care not to let the screwdriver exert excessive force on the fan.

If excessive force is exerted on the fan, it may cause a malfunction.

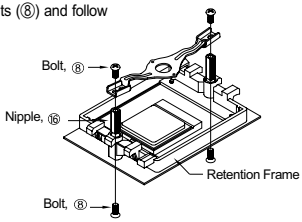


◈ Motherboards with Pushpin - type Retention Frame need the included nipples (⑯) and bolts (⑧) for installation of the cooler.

Remove the push-pins from the retention frame, and insert the nipples (⑯) into it. Fasten them to the backplate using the bolts (⑧) and follow these steps in order :

③ Apply Thermal Grease

④ Place Cooler

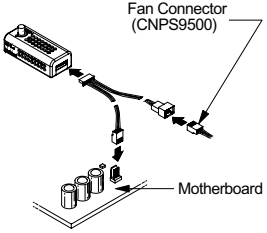


⑤ Connect Power (Use FAN MATE 2)

◆ Please refer to FAN MATE 2 installation and usage on page 7.

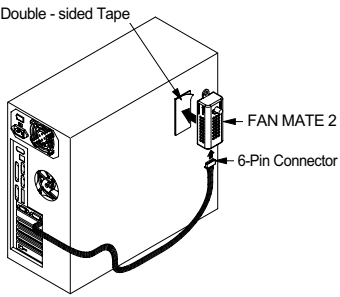
10. FAN MATE 2 Installation and Usage

1) Installing FAN MATE 2 on the Inside of the System



Connect the appropriate 3-pin connector on the cable to the motherboard fan header and the CNPS9500's fan connector.

2) Installing FAN MATE 2 on the Outside of the System



Pull the 6-pin connector out of the system through the back and connect it to FAN MATE 2, which should be installed on the case using the included double-sided tape (⑤).

◆ When the speed control knob on FAN MATE 2 is turned fully counter-clockwise, the fan operates in Silent Mode. Turned fully clockwise, it operates in Normal Mode. You can select the desired fan speed by turning the knob.

Note) FAN MATE 2 has been specifically designed for the fan of this product.
Zalman Tech Co., Ltd. is not responsible for any damage to systems or CPUs caused by using it with other types of fans.

11. Notes on Usage

1) Checking CPU Compatibility

Please refer to "Compatible CPUs" on page 3 to confirm that your CPU is compatible before using the CPU cooler.

2) Cautions During Booting

When booting the computer, it may automatically power down after an alarm sound by a system monitoring program to indicate that the CPU fan is rotating slowly. If this happens, turn the speed control knob fully clockwise to increase the fan speed. Then set 'CPU Fan Detected' to 'Disabled' in BIOS settings, or set the slowest rotational speed of the CPU fan in the system monitoring program to less than or equal to 1300rpm.

Note) Some motherboards do not boot if the rotational speed of the CPU fan is below a certain rpm. If the BIOS settings are updated, Silent Mode can be used. For more information on updating your BIOS, please refer to your motherboard manufacturer's website. Disabling CPU fan speed detection in BIOS settings does not affect computer performance.

3) OVERCLOCKING

Zalman Tech Co., Ltd. is not responsible for any damage resulting from CPU OVERCLOCKING.

12. Zalman Noise Prevention System

When building a noiseless computer, use Zalman's Noiseless Power Supply, CPU Cooler, Case Fan, Fanless Northbridge Cooler, and Video Card Cooler to achieve stable performance and maintain a noiseless environment.

Noiseless Power Supply

Fanless Northbridge Cooler

Heatpipe HDD Cooler

Noiseless Case Fan

Quiet VGA Cooler

Multi Fan Controller

13. TNN (Totally No Noise) Computer Case

The TNN 500AF is the world's first absolutely **noiseless, anti-dust computer case** for high-end systems that has been developed with Heatpipe Technology, HSC (Heat Source Contact) Power Technology, High Capacity Extrusion Technique, and FMS (Flexible Mounting Structure) Design Technology by ZALMAN Tech Co., Ltd.

The TNN 500AF package includes a high performance aluminum computer case with an absolutely noiseless cooling solution that does not require the use of a fan, making it ideal for :

1. **Digital Audio Workstations (DAW)** in broadcasting, recording, and postproduction studio control rooms.
2. **Multi Media & Storage Servers** for offices, educational facilities, and hotels.
3. **Home Theater and Multi Media Systems** for living rooms.
4. **High Performance Noiseless Workstations & Servers** for SOHO (Small Office Home Office) systems.

For more information, please visit the Zalman website.